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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,027	11/30/2000	Alan F. Graves	12728ROUS01U	9975
626	7590	05/31/2005	EXAMINER	
NORTEL NETWORKS LIMITED P. O. BOX 3511, STATION C OTTAWA, ON K1Y 4H7 CANADA			PHAN, HANH	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/726,027

Applicant(s)

GRAVES ET AL.

Examiner

Hanh Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2000.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,9,10,18,26,29,32,33 and 38-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,9,10,18,26 and 29 is/are rejected.
- 7) ☒ Claim(s) 32,33 and 38-40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 11/26/2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 9, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiragaki (US Patent No. 5,457,556) in view of Li et al (US Patent No. 6,579,018).

Regarding claims 1 and 25, referring to Figure 8, Shiragaki discloses a protection switching arrangement for optical switching systems comprising:

an optical space switch (i.e., optical space switch 13, Fig. 8) having multiple inputs and multiple outputs and being operable to switch optical channel signals from any one of a plurality of the inputs to any one of the plurality of the outputs;

a plurality of wavelength division demultiplexers (i.e., wavelength division demultiplexers 12-1, 12-2 and 12-3, Fig. 8) each one of the wavelength division demultiplexers having a plurality of outputs each coupled to one of the inputs of the optical space switch, each one of the wavelength division demultiplexers having input and being operative for dividing a composite optical signal at its inputs into optical

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channel signals and providing each optical channel signal to the optical space switch (13)(Fig. 8);

a spare wavelength division demultiplexer (i.e., a spare wavelength division demultiplexer 12-3, Fig. 8) having a plurality of outputs each coupled to one of the inputs of the optical space switch (13), the spare wavelength division demultiplexer (12-3, Fig. 8) having one input and being operative for dividing a composite optical signal at its input into optical channel signals and providing each optical signal to the optical space switch (13); and

an optical protection switch (i.e., space switch 10, Fig. 8) having a plurality of inputs, a plurality of straight-through outputs (i.e., a straight-through output f5 going to the demultiplexer 12-2, Fig. 8), and a protection output (i.e., a protection out f6 going to the spare demultiplexer 12-3 if a fault occurs at the input of demultiplexer 12-2, Fig. 8) , the optical protection switch (optical space switch 10) being coupled at each of its straight through outputs to the input of a respective one of the wavelength division demultiplexers (i.e., demultiplexers 12-1 and 12-2, Fig. 8) and coupled at its protection output to the input of the spare wavelength division demultiplexer (i.e., spare demultiplexer 12-3) (see col. 8, lines 49-67, col. 9, lines 1-67 and col. 10, lines 1-15).

Shiragaki differs from claims 1 and 25 in that he does not specifically teach the optical switch comprises a plurality of optical switching matrices, each one the optical matrices having a plurality of inputs and a plurality of outputs and being operative to switch optical channel signals from any one of the inputs to any one of the outputs. However, Li in US Patent No. 6,579,018 teaches an optical switch which comprises a

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plurality of optical switching matrices, each one the optical matrices having a plurality of inputs and a plurality of outputs and being operative to switch optical channel signals from any one of the inputs to any one of the outputs (Figs. 1-15, col. 3, lines 25-67 and col. 4, lines 1-59) . Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the optical switch which comprises a plurality of optical switching matrices, each one the optical matrices having a plurality of inputs and a plurality of outputs and being operative to switch optical channel signals from any one of the inputs to any one of the outputs as taught by Li in the system of Shiragaki. One of ordinary skill in the art would have been motivated to this since Li suggests in column 3, lines 25-67 and col. 4, lines 1-59 that using such the optical switch comprises a plurality of optical switching matrices, each one the optical matrices having a plurality of inputs and a plurality of outputs and being operative to switch optical channel signals from any one of the inputs to any one of the outputs have advantage of allowing for self healing of single failures with minimal switching and to restore the traffic connection between network elements.

Regarding claim 9, Shiragaki further teaches the optical channels are lambdas (Fig. 8).

Regarding claim 26, Shiragaki further teaches the optical protection switch is operable to couple one of the its inputs associated with a faulty one of the wavelength division demultiplexers to its protection output to enable the spare wavelength division demultiplexer to serve as a backup for the faulty one of the wavelength division demultiplexers (Fig. 8).

4. Claims 10, 18 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiragaki (US Patent No. 5,457,556) in view Li et al (US Patent No. 6,579,018) further in view of Kuroyanagi et al (US Patent No. 6,433,900).

Regarding claim 10, Shiragaki as modified by Li differs from claim 10 in that it fails to teach a plurality of second optical protection switches, each one of second optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled to one of the inputs of a respective one of the optical switching matrices and a plurality of inputs coupled to the outputs of a respective one of the wavelength division demultiplexers. However, Kuroyanagi in US Patent No. 6,433,900 teaches a plurality of second optical protection switches, each one of second optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled to one of the inputs of a respective one of the optical switching matrices and a plurality of inputs coupled to the outputs of a respective one of the wavelength division demultiplexers (Figs. 14 and 15, col. 16, lines 4-67 and col. 17, lines 1-35). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the plurality of second optical protection switches, each one of second optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled to one of the inputs of a respective one of the optical switching matrices and a plurality of inputs coupled to the outputs of a respective one of the wavelength division demultiplexers as taught by Kuroyanagi in the system of Shiragaki modified by Li. One of ordinary skill in the art would have been motivated to do this since Kuroyanagi suggests in column 16, lines 4-

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67 and col. 17, lines 1-35 that using such the plurality of second optical protection switches, each one of second optical protection switch coupled at its outputs to the inputs of the plurality of optical switching matrices and coupled to one of the inputs of a respective one of the optical switching matrices and a plurality of inputs coupled to the outputs of a respective one of the wavelength division demultiplexers have advantage of allowing providing a highly reliable communication can be secured by changed over the system from the working system to the protection system against breakage of an optical transmission path and failure of an optical transmission apparatus.

Regarding claim 18, Shiragaki further teaches the optical channels are λ s (Fig. 8).

Regarding claim 29, the combination of Shiragaki, Li and Kuroyanagi teaches further comprising a spare optical switching matrix having a plurality of inputs and a plurality of outputs and being operative to switch optical channel signals from any one of its inputs to any one of its outputs, each one of the second optical protection switches having a spare output coupled to one of the inputs of the spare optical switching matrix. (Fig. 8 of Shiragaki, Figs. 1-15 of Li and Figs. 14 and 15 of Kuroyanagi).

Allowable Subject Matter

5. Claims 32, 33 and 38-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 9, 10, 18, 26, 29, 32 and 33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


HANH PHAN
PRIMARY EXAMINER